



# Psychosocial Determinants of Community Participation in Dal Lake Conservation: A SIMCA-Based Assessment

Samiya Gul<sup>1</sup>, Farhet Ahmad Shaheen<sup>2</sup>, Uzma Majeed<sup>3</sup> and Masroor Majid<sup>4</sup>

<sup>1</sup>Postdoctoral fellow (ICSSR) Institute of Business and Policy Research, SKUAST, Shalimar Srinagar, Jammu & Kashmir, India - 190025 and corresponding author e mail: [samiyagul123@gmail.com](mailto:samiyagul123@gmail.com)

<sup>2</sup> Associate professor, Institute of Business and Policy Research, SKUAST, Shalimar Srinagar, Jammu & Kashmir, India - 190025 e mail: [fashaheen@rediffmail.com](mailto:fashaheen@rediffmail.com)

<sup>3</sup>Senior Research Fellow, Institute of Business and Policy Research, SKUAST, Shalimar Srinagar, Jammu & Kashmir, India – 190025 e mail: [bhatuzma004@gmail.com](mailto:bhatuzma004@gmail.com)

<sup>4</sup> Young Professional, HADP-04, Institute of Business and Policy Research, SKUAST, Shalimar Srinagar, Jammu & Kashmir, India – 190025 e mail: [mdar66@gmail.com](mailto:mdar66@gmail.com)

**Abstract:** *Dal Lake has undergone decades of ecological degradation despite extensive governmental interventions, highlighting the need for community-driven conservation. This paper examines Dal Lake conservation through the lens of the Social Identity Model of Collective Action (SIMCA) to identify the psychosocial antecedents that motivate residents to engage in collective conservation behaviour. The study explores how social identity, group-based emotions, perceived injustice, collective efficacy, moral conviction, and solidarity operate as determinants of collective action. A structured questionnaire survey was administered to 372 residents living in the Dal Lake using a random sampling approach. Descriptive statistical analysis was conducted to assess the levels of social identity, group-based emotions, perceived injustice, collective efficacy, solidarity, moral conviction, and collective action tendencies. The findings reveal that residents exhibit strong social identity, emotional alignment, and perceived injustice in relation to lake degradation; however, these sentiments do not fully translate into collective action, indicating a gap between attitudinal commitment and behavioural engagement. By adapting SIMCA to an environmental conservation context, this paper emphasises that successful restoration of Dal Lake depends not only on technical interventions but also on strengthening psychosocial drivers that build unity, moral responsibility, and confidence in collective efforts. The conceptual framework provides a foundation for designing people-centred and socially embedded conservation strategies.*

**Keywords:** *SIMCA, Dal Lake, community engagement, collective action, conservation, social identity, Exploratory Factor Analysis, Conservation.*

## 1. INTRODUCTION

Dal Lake, located in the heart of Srinagar, is one of the most significant ecological and cultural landmarks of Jammu and Kashmir. It supports thousands of residents through tourism, fisheries, and agriculture and serves as a symbol of the region's natural beauty and heritage. Despite numerous governmental interventions, the lake has faced persistent degradation due to factors such as unchecked urbanization, pollution, and inadequate waste management (LAWDA, 2019; Rashid et al., 2017). Most conservation programs have emphasized technical and infrastructural solutions, often overlooking the central role of the local community in sustaining these initiatives. The Social Identity Model of Collective Action (SIMCA) provides a useful framework for understanding how social and psychological factors motivate individuals and groups to participate in collective efforts for environmental conservation (van Zomeren et al., 2008; Klandermans, 2017).



Originally developed to analyse political and social movements, SIMCA integrates three key determinants of collective behavior—social identity, perceived injustice, and collective efficacy (van Zomeren, Postmes, & Spears, 2008). These constructs explain why individuals join and sustain movements that seek to bring about social change. In the environmental context, the model provides a theoretical foundation for understanding how communities can unite to protect shared ecological resources. This paper extends the application of SIMCA to the conservation of Dal Lake, highlighting how social identity, moral conviction, and collective efficacy can transform conservation from a technical exercise into a socially embedded movement.

## 2. Literature Review

The Social Identity Model of Collective Action (SIMCA) proposes that collective action arises when individuals identify with a group whose goals align with their values, perceive an injustice that affects the group, and believe that their collective efforts can produce meaningful change (van Zomeren et al., 2008). Social identity refers to an individual's sense of belonging to a group and plays a crucial role in motivating people to act for collective goals (Chan, 2014). When community members see themselves as part of a group committed to a shared cause, such as protecting Dal Lake, they are more likely to engage in cooperative behavior. Perceived injustice generates emotional responses like anger or moral outrage, which, in turn, energize individuals to take action (Mackie & Smith, 2002; Smith et al., 2015). Collective efficacy, or the belief that a group can successfully achieve its objectives, sustain engagement and prevent apathy (Hornsey et al., 2006).

Researchers have expanded SIMCA to incorporate emotional and moral dimensions that strengthen group cohesion and participation (Drury & Reicher, 2000; Skitka, 2010). Group-based emotions such as pride, fear, and anger can amplify collective identity, while moral conviction reinforces the sense of obligation to act. Solidarity, a sense of unity and shared purpose, further consolidates these processes by linking individual motivation with collective outcomes (Drury & Reicher, 2005). In the context of Dal Lake conservation, SIMCA provides an analytical framework to understand how environmental degradation can trigger identity-based responses, moral commitments, and cooperative action among local communities.

## 3. Research Objectives

- To conceptualise the applicability of the Social Identity Model of Collective Action (SIMCA) for Dal Lake conservation by identifying the psychosocial determinants that influence community engagement.
- To examine how social identity, group-based emotions, perceived injustice, collective efficacy, moral conviction, and solidarity collectively shape the behavioural willingness of residents to participate in lake conservation.

## 4. Methodology

This study adopted a quantitative research design to investigate the psychosocial determinants of collective action for Dal Lake conservation through the lens of the Social Identity Model of Collective Action (SIMCA). A structured questionnaire was administered to 372 residents living around Dal Lake, selected through a probability-based sampling approach to ensure representation of different demographic groups. The instrument comprised items measuring Social Identity, Group-Based Emotions, Perceived Injustice, Efficacy Beliefs, Moral Conviction, Solidarity, and Collective Action using a five-point Likert scale. Data were screened for completeness, missing values, and multivariate assumptions prior to analysis. Descriptive statistics were used to summarize sample characteristics and response patterns, followed by Exploratory Factor Analysis (EFA) to identify the underlying factor structure and assess dimensionality of the constructs. Sampling adequacy was confirmed through the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's Test of Sphericity, after which factors were retained based on eigenvalue ( $>1$ ) and factor loading ( $>0.50$ ) criteria. The validated factor structure was subsequently conceptualised within the SIMCA framework to interpret how the psychosocial variables collectively shape conservation-oriented behaviour among the Dal Lake community.

### 4.1. Gap Analysis and Rationale

While SIMCA has been extensively applied to social and political movements, its integration into environmental conservation studies is limited (Parkes et al., 2023). Research on Dal Lake has traditionally emphasized engineering interventions, such as wastewater treatment, dredging, and weed management while neglecting the psychological and sociocultural aspects of conservation (Bhat et al., 2017; LAWDA, 2022). This focus has led to weak community



participation and a lack of long-term ownership of conservation initiatives. The application of SIMCA to environmental conservation, therefore, addresses a critical gap by incorporating social identity and moral dimensions into the understanding of collective ecological behavior.

By examining Dal Lake through the lens of SIMCA, this paper aims to identify the major factors for the conservation of Dal Lake. This highlights that successful conservation requires more than technological solutions; it demands the active participation of communities who identify with the ecosystem they seek to protect. Understanding the psychological mechanisms of participation, such as perceived injustice and group efficacy, can inform the design of interventions that resonate with local motivations and foster a sense of collective responsibility (van Zomeren et al., 2012).

## 5. Analysis

### 5.1. Demographic Statistics

The 372 responses were collected from the Dal Dwellers and sample characteristics were analysed using frequency distributions (Table 1). The analysis shows that gender groups are represented, with 253 males and 120 females. Concerning the age group, 20% are less than 25 years, 32% in the range of 26-35 years, 27% in the range of 36-45 years, 9% in the range of 46-55 years and 12% are above 55 years. Regarding education, 45% opted "Never have been to school", 12% have gone to primary school, 35% high school, 5% have completed their bachelor's degree, and 3% had a postgraduate degree. Concerning Occupation, 25% were unemployed, 1% were Government employees, 13% worked in private companies, 42% were found self-employed. When asked about their monthly income, 87% of respondents were in the income level less than Rs 30,000 per month 5% were found in the level of Rs 30,000-Rs 60,000, and 8% preferred not to disclose. Regarding Community engagement methods, 39% opted for awareness campaigns, 34% preferred educational initiatives and 27% opted the participatory decision-making processes for the conservation of Dal Lake.

**Table 1. Background demographic details of the participants.**

S.No.	Variable	Frequency	Percent
	<b>Gender</b>		
1	Male	253	68
2	Female	120	32
	<b>Total</b>	373	100
	<b>Age group</b>		
1	<25	73	20
2	25-35	119	32
3	36-45	101	27
4	46-55	35	9
5	>55	45	12
	<b>Total</b>	373	100
	<b>Education</b>		
1	Never have been to school	166	45
2	Primary school	44	12
3	High school	132	35
4	Bachelor's degree	18	5
5	Post graduate degree	13	3
	<b>Total</b>	373	100
	<b>Occupation</b>		
1	Unemployed	95	25
2	Private company	48	13
3	Self employed	158	42
4	Government	4	1
5	Others	68	18
	<b>Total</b>	373	100



	<b>Monthly income</b>		
1	<Rs 30,000	325	87
2	Rs 30000-Rs 60,000	18	5
3	Rs 60,000-Rs 100000	0	0
4	>Rs 100,000	0	0
5	Don't want to disclose	30	8
	<b>Total</b>	373	100
	<b>Community engagement methods</b>		
1	Awareness campaigns	144	39
2	Educational initiatives	128	34
3	Participatory decision-making processes	101	27
4	Others	0	0
	<b>Total</b>	373	100

## 5.2. Descriptive Statistics

The descriptive statistical analysis provides insights into the overall trends and consistency of responses across various constructs. The descriptive statistics summarize the participants' responses across seven major constructs: Social Identity (SI), Group-Based Emotions (GE), Perceived Injustice (PI), Efficacy Beliefs (EB), Moral Conviction (MC), Solidarity (SOL), and Collective Action (CA) based on 372 respondents. Each construct's items were rated on a Likert scale (likely 1–5), and the mean, median, mode, and standard Deviation (SD) were computed to indicate central tendency and dispersion. The results indicate that the respondents generally exhibit a strong sense of social identity, high levels of perceived injustice, and notable emotional engagement with their group or cause. However, their reported levels of collective action remain comparatively low, suggesting a potential gap between attitudes and behavior.

For the construct of Social Identity, mean values ranged between 3.97 and 4.21 with low standard deviations (around 0.58), indicating a consistent and positive sense of group belonging among respondents. Group-Based Emotions recorded high mean scores (4.44–4.56), reflecting that participants experienced strong emotional alignment with their group. The low variability further signifies a shared emotional state among the respondents. Perceived Injustice showed the highest mean values (4.60–4.74) and the lowest standard deviations (approximately 0.5), highlighting a strong and uniform belief in the presence of injustice among the participants. Efficacy Beliefs also demonstrated high agreement (means between 4.14–4.26), indicating that respondents believed in the collective ability of their group to achieve goals or bring about change. Moral Conviction items recorded means close to 4.0, signifying that participants hold firm moral beliefs regarding their cause. The standard deviations remained low, denoting consistent moral alignment. Solidarity scores (means around 3.7–3.8) were moderate, showing a general sense of unity, though slightly less intense compared to other constructs. In contrast, Collective Action received notably lower mean values (1.98–3.06) with higher standard deviations (approximately 1.0–1.3), suggesting diverse opinions and lower behavioral engagement. This implies that while respondents strongly identify with their group and feel emotionally and morally connected, their willingness or actual participation in collective actions is relatively limited.

Overall, the descriptive statistics reveal that respondents are united in perception, belief, and emotion but display mixed tendencies when it comes to translating these sentiments into collective behavioral outcomes. This indicates a potential area for policy and community interventions aimed at enhancing mobilization and participation in sustainable community-based activities.

**Table 2: Depicting descriptive statistics**

Constructs	items	No. of respondents	Mean	Median	Mode	Standard Deviation
Social Identity	SI_1	372	4.19	4	4	0.583
	SI_2	372	3.97	4	4	0.885



	SI_3	372	4.18	5	5	0.577
	SI_4	372	4.21	4	4	0.592
	SI_5	372	4.11	4	4	0.637
Group-Based Emotions	GE_1	372	4.44	4	4	0.651
	GE_2	372	4.18	4	4	0.720
	GE_3	372	4.11	4	4	0.731
	GE_4	372	4.56	5	5	0.748
	GE_5	372	4.54	4	4	0.749
Perceived Injustice	PI_1	372	4.60	5	5	0.543
	PI_2	372	4.65	5	5	0.521
	PI_4	372	4.71	5	5	0.510
	PI_5	372	4.74	4	4	0.496
Efficacy Beliefs	EB_2	372	4.14	4	4	0.651
	EB_3	372	4.15	4	4	0.657
	EB_4	372	4.18	4	4	0.577
	EB_5	372	4.26	4	4	0.615
Moral Conviction	MC_1	372	4.20	4	4	0.570
	MC_3	372	4.14	5	5	0.636
	MC_5	372	4.12	4	4	0.649
Solidarity	SOL_1	372	3.78	4	4	0.657
	SOL_2	372	3.69	4	4	0.687
	SOL_3	372	3.72	4	4	0.661
	SOL_4	372	3.74	4	4	0.662
	SOL_5	372	3.77	4	4	0.668
Collective Action	CA_1	372	2.43	2	2	1.217
	CA_2	372	3.06	4	4	1.289
	CA_3	372	2.43	2	2	1.188
	CA_4	372	2.03	2	2	0.957

### 5.3. Measurement and Validation

The Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy for the dataset is 0.825, which falls in the “meritorious” category as per Kaiser’s (1974) classification. A KMO value above 0.80 indicates that the correlations among variables are sufficiently compact and that the dataset is highly suitable for factor analysis. This suggests that common factors are likely to emerge from the data structure, justifying the application of Exploratory Factor Analysis (EFA). Bartlett’s Test of Sphericity is statistically significant ( $\chi^2 = 12384.509$ ,  $df = 351$ ,  $p < .001$ ), confirming that the correlation matrix is not an identity matrix. A significant result implies that correlations between items are adequate and that the variables share enough common variance for structure detection. This further supports the appropriateness of conducting EFA on the dataset. Overall, the combination of a high KMO value (0.825) and a highly significant Bartlett’s Test indicates that the dataset has strong factorability and is suitable for further multivariate analysis, including EFA.

**Table 3: KMO and Bartlett’s test**

<b>KMO and Bartlett’s Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.825
Bartlett’s Test of Sphericity	Approx. Chi-Square	12384.509
	Df	351
	Sig.	.000



### 5.4. Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was conducted using a sample of 372 respondents to identify the underlying factor structure of the scale items. The analysis extracted seven factors corresponding to the theoretical constructs: Social Identity, Group-Based Emotions, Perceived Injustice, Efficacy Beliefs, Moral Conviction, Solidarity, and Collective Action. All factors had eigenvalues greater than 1 and together explained approximately 83.5% of the total variance, indicating a strong and coherent factor structure. Most items demonstrated high factor loadings (ranging from .768 to .948) and high communalities, suggesting that each factor accounted for a substantial portion of item variance. The results confirm that the instrument possesses a robust underlying structure with clearly defined dimensions that align with theoretical expectations. These findings provide strong evidence of the construct validity and reliability of the measurement model, supporting its suitability for subsequent Confirmatory Factor Analysis (CFA) and further empirical testing (Costello & Osborne, 2005; Fabrigar et al., 1999; Hair et al., 2019).

Table 4: Depicting Exploratory Factor Analysis (EFA)

S. No.	Constructs	items	communalities	Eigen value	Total variance % explained	Cron bach alpha
1	Social Identity	SI_1	0.978	7.335	17.08	0.779
		SI_2	0.631			
		SI_3	0.671			
		SI_4	0.957			
		SI_5	0.946			
		GE_1	0.806			
2	Group-Based Emotions	GE_2	0.721	4.090	13.512	0.942
		GE_3	0.773			
		GE_4	0.943			
3	Perceived Injustice	GE_5	0.948	3.081	13.021	0.924
		PI_1	0.699			
		PI_2	0.727			
		PI_4	0.928			
		PI_5	0.932			
4	Efficacy Beliefs	EB_1	0.782	2.582	12.755	0.923
		EB_2	0.759			
		EB_3	0.742			
		EB_4	0.932			
5	Moral Conviction	EB_5	0.832	2.356	10.745	0.731
		MC_1	0.961			
		MC_3	0.792			
		MC_5	0.842			
		SOL_1	0.922			
6	Solidarity	SOL_2	0.862	1.931	10.254	0.973
		SOL_3	0.921			
		SOL_4	0.960			
7	Collective Action	SOL_5	0.956	1.164	6.102	0.867
		CA_1	0.705			
		CA_2	0.747			
		CA_3	0.794			
		CA_4	0.838			



### 5.5. Scree Plot

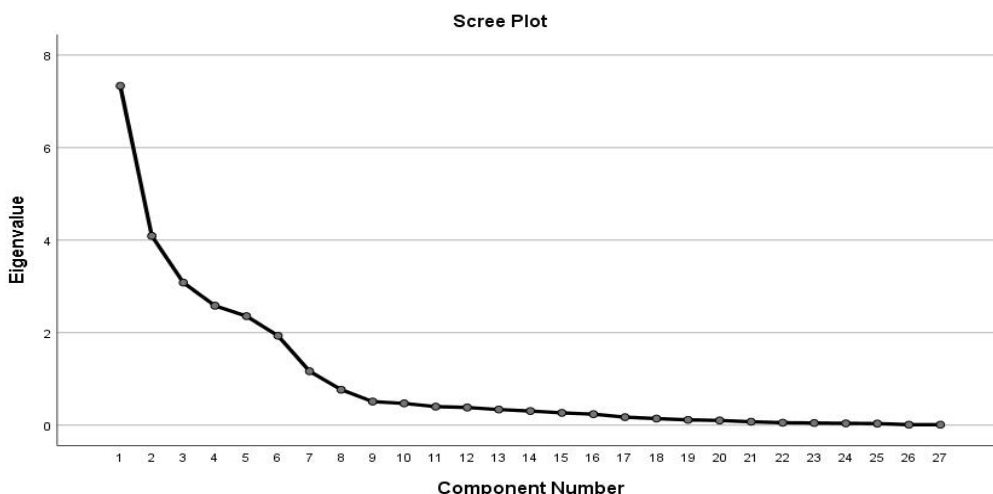


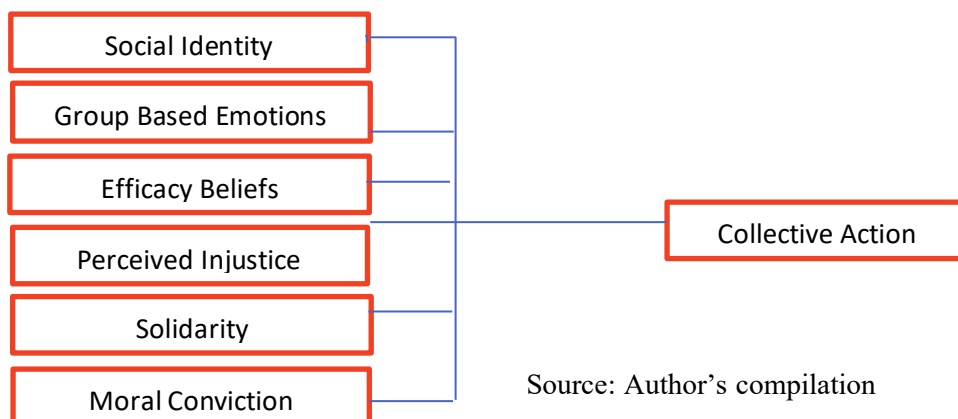
Fig 1: Scree Plot diagram for the various variables extracted from EFA

The Scree Plot displayed a distinct inflection or “elbow” point after the seventh factor, indicating that the first seven factors account for the most meaningful variance in the data. The eigenvalues of these seven factors were above the threshold value of 1.0, after which the slope of the curve levelled off, suggesting that subsequent factors contributed minimal additional explanatory power. This visual pattern supports the retention of seven factors in accordance with the Kaiser criterion and theoretical expectations. Hence, the Scree Plot confirms the seven-factor solution derived from the exploratory factor analysis, confirming that these factors capture the major underlying dimensions of the dataset (Costello & Osborne, 2005).

## 6. Results

The findings reveal a strong psychosocial foundation for collective environmental engagement among Dal Lake residents. Descriptive results show consistently high levels of social identity, group-based emotions, perceived injustice, efficacy beliefs, and moral conviction, indicating that respondents feel emotionally connected to the lake, perceive its degradation as a shared injustice, and believe that collective efforts could lead to positive change. Solidarity scored moderately high, suggesting a sense of unity within the community, although not uniformly strong across participants. In contrast, collective action intentions recorded the lowest mean values and the highest variability, highlighting limited behavioural involvement despite strong attitudinal support. Taken together, the results indicate a clear gap between psychosocial readiness and actual participation in conservation activities, suggesting that although residents possess the emotional, cognitive, and moral determinants associated with collective environmental behaviour, these drivers do not consistently translate into collective action for Dal Lake conservation

### 6.1. Conceptual Model for Dal Lake Conservation



Source: Author’s compilation

Fig.2: Antecedents of SIMCA for the conservation of Dal Lake



The conceptual model proposed in this study integrates the constructs of SIMCA to explain the dynamics of community participation in Dal Lake conservation. Perceived environmental injustice stemming from pollution, encroachment, and neglect evokes emotional responses such as anger and frustration (Smith et al., 2012). When these emotions are shared collectively, they strengthen social identity and foster solidarity (Drury & Reicher, 2000). Moral conviction acts as a catalyst by transforming environmental protection into a moral and cultural obligation (Skitka, 2010). These factors together enhance collective efficacy, motivating individuals to participate in organized conservation activities such as lake clean-up campaigns, awareness drives, and advocacy for sustainable tourism policies. Over time, sustained engagement based on shared identity and moral purpose leads to collective behavioral change and long-term environmental benefits.

## 7. Conclusion

The study concludes that the long-term conservation of Dal Lake requires a paradigm shift from infrastructure-driven and regulatory interventions to socially rooted and community-owned strategies. Although residents strongly identify with the lake and experience emotions of pride, anger, and perceived injustice about its degradation, conservation efforts remain weak when these sentiments are not translated into solidarity and moral conviction. SIMCA offers an effective lens to understand this behavioural gap: when environmental protection is perceived as a shared identity, a collective injustice, and a moral obligation, individuals are more likely to engage in long-term cooperative action.

The findings based on descriptive evidence show that while residents possess high levels of identity, emotions, and efficacy beliefs, their actual participation in conservation activities is limited. This indicates that conservation programmes must nurture a sense of unity, moral responsibility, and confidence in collective impact rather than focusing solely on technical solutions. The conceptual framework therefore calls for policy approaches that treat residents not as passive observers but as co-owners and custodians of the lake ecosystem. Community-centred engagement, participatory decision-making, and solidarity-building initiatives rather than isolated top-down interventions represent the pathway to durable environmental stewardship and the ecological revival of Dal Lake.

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